

## ***City of Tucson Independent Audit and Performance Commission***

### **Review of Tucson Police Department's Analysis: Cost to Respond to False Burglar Alarms December 7, 2011**

At the Independent Audit and Performance Commission's (IAPC) September 8, 2011 meeting, Assistant Police Chief John Leavitt requested that the Commission provide assistance to the Tucson Police Department (TPD) in:

- Establishing the false alarm rate for private burglar alarm systems (false alarms as a percentage of total burglar alarms received).
- Establishing the cost of TPD response to false burglar alarms.

At the meeting the Assistant Chief and staff presented background information and the IAPC established a Subcommittee to conduct the requested review. Commission member Pete McNellis was selected as Chair, with Commission members William Tilden and David Cormier also serving on the Subcommittee. The Subcommittee met on September 29, October 13, November 9, and December 2. The full IAPC approved the Subcommittee's report at the December 7, 2011 Commission meeting by a 5-0 vote.

#### **TPD Services Related to Alarm Calls**

TPD incurs both direct and indirect costs when responding to alarm calls.

Calls to the TPD Alarm Line are answered by a Police Service Operator (PSO).

- When an alarm call is received from the alarm company indicating only a single alarm trip and no responsible party (owner) response, the PSO records the information as a Level 7 alarm. The PSO takes the information provided by the alarm company and forwards the information to the Police Dispatcher who issues a general broadcast of a Level 7 alarm call to Patrol Officers. If in the area, Police Units *may* respond to a Level 7 call but generally do not. If no other information is subsequently received on a single trip call, such as another call from the alarm company indicating additional alarm trips, the alarm is generally canceled after sixty minutes.
- When an alarm call is received from the alarm company indicating multiple trips or a responsible party at the alarm site, the PSO records the information at a level requiring police dispatch. The PSO forwards the information to the Police Dispatcher who dispatches appropriate Police Units (generally two Patrol Officers) to the site.

TPD also staffs a three person Alarm Unit. The Alarm Unit analyzes all false alarm calls recorded in the TPD database (see following section) to determine if an alarm violation has occurred and if so, issues a citation to the property, business owner, or statutory agent. An alarm violation occurs when a system has more than two false alarms within a

365 day period. Violators are subject to fines of \$195 for the third false alarm, with fines increasing in dollar amount with each successive false alarm during the 365 day period. If the citation is contested in court, officers from the Alarm Unit will prepare the case and present testimony. The Alarm Unit also prepares course materials and presents them at the Alarm Users Diversion classes, which are held monthly. This class is available to alarm users who have committed a violation of the current statute; if the alarm user attends the class the violation is dismissed.

### **TPD Call Tracking Statistics**

Because the volume of calls to TPD plays a significant role in the cost analysis, the Subcommittee requested that City Internal Audit staff accompany a Subcommittee member to review the TPD system utilized for logging and tracking calls. That review was conducted in November. The system was found to be adequate and provided acceptable documentation.

TPD uses software (Computer Aided Dispatch/Records Management System) to categorize calls for service, record the number of officers going to a call, and track the time required to respond to such calls. TPD's Research and Analysis Section uses this software to aggregate calls by category and determine both the average amount of time and the average number of officers that respond to different types of calls. It also records the time of dispatch and time that the call is cleared or closed out. This data provides for the calculation of response time required for various categories of calls. This information, along with budgeting software that is used to determine the average salaries and fringe benefits of responders, provides the Department with the information necessary to develop the direct costs associated with different types of calls, including alarms and false alarms.

### **False Alarm Rate for Private Burglar Alarm Systems**

At the September 29<sup>th</sup> meeting TPD staff presented statistics on annual calls from private alarm systems. During FY 2011, TPD received 18,393 alarm calls. Of these, 8,241 (45%), were treated as Level 7 alarm calls, requiring minimal TPD resources. TPD provided officer response to the remaining 10,152 alarm calls (55%). Of those with officer response, 441, or approximately 4%, were identified as legitimate alarm calls and 9,711, or approximately 96%, were false alarms (Attachment 1). As a percentage of total alarms calls, 97.6% were subsequently identified as false alarms.

### **Cost of TPD Response to False Burglar Alarms**

TPD indicated to the Commission that their initial analysis focused on direct costs related to responding to false burglar alarms. Based on discussion regarding full cost analysis with Internal Audit staff, TPD adjusted their approach to one intended to capture the full cost related to false alarms, including allocated overhead expenses. Establishing the full cost of an activity is important when looking at setting fees as a percentage of costs.

Prior to the meeting on September 29, TPD staff provided the Subcommittee with a model intended to calculate full cost recovery of alarm response. That analysis indicated total allocated costs of \$10.14 million. A complete copy of the analysis and the supporting work papers is available through the City's Office of Budget and Internal Audit

Audit. The Subcommittee discussed the model and the supporting documentation at the meetings on September 29 and October 13.

The Subcommittee found that the methodology used overstated costs by including functions that did not necessarily relate directly or indirectly to alarm calls, and utilized overly simplified allocation factors. The Subcommittee discussed with TPD staff what is needed in developing a supportable cost allocation analysis. All parties agreed that an analysis would require:

- Evaluating the TPD organization to identify core functions or services
- Categorizing of all TPD costs into costs directly or indirectly supporting core services/functions
- Tying costs to fiscal year budgets or to actual financial information
- Developing allocation factors

After an extensive discussion, the Subcommittee reached a consensus that, although a full cost analysis would provide the most accurate assessment of the resources necessary to deliver the service, the Department, in consideration of time and resource factors, should consider initially focusing on TPD's initial approach, i.e., development of a direct cost model. It was noted that nearly all data required for development of direct costs was available in the supporting documentation/worksheets provided by TPD to the Subcommittee. A model for calculation was suggested by the Subcommittee. TPD concurred with the model's approach and agreed to return to the next meeting with the calculation of direct costs for alarm response. That analysis was presented by TPD at the Subcommittee's November 9 meeting. Attachment 2 is a summary of that analysis, which calculates total direct costs of \$1.12 million.

### **Finding**

The Subcommittee reviewed TPD's final analysis which included the Subcommittee's recommended methodology and agreed that it accurately reflected the direct costs associated with false alarm response: \$1.12 million. Assuming that TPD's estimate of 50,000 alarm systems within the City is accurate, an annual fee of \$20 per user to approximately recover direct costs seems reasonable should the Mayor and Council wish to adopt it.

### **Acknowledgements**

The Commission commends TPD for inviting it to work collaboratively with its staff to generate an improved analysis. Thanks go to TPD staff, especially Assistant Chief John Leavitt, and Richard Prater, TPD Finance Manager, for providing background information, data, explanations, and research. Additionally, the Commission thanks Dennis Woodrich, Principal Auditor, Budget and Internal Audit, for providing support to the Subcommittee in terms of both research and meeting coordination.

**Breakout of Private Burglar System Alarm Calls Received  
July 1, 2010 to June 30, 2011**

Total Alarm Calls Received	18,393	100%
Initially Identified as False Alarms/Cancellations (no police officer response needed)	8,241	44.8%
Alarm Calls with TPD Officer Response	10,152	55.2%

**Breakout of False Alarms as Percentage of Calls with TPD Officer Response  
July 1, 2010 to June 30, 2011**

Alarm Calls with TPD Officer Response	10,152	100%
Actual Alarms	441	4.3%
False Alarms	9,711	95.7%

**Total False Alarms as Percentage of Total Alarm Calls  
July 1, 2010 to June 30, 2011**

Total False Alarms (8,241 + 9,711)	17,952	
False Alarms as Percentage of Total Alarms Calls (17,952/18,393)		97.6%

## Summary of Estimated TPD Costs to Respond to False Alarms

Patrol Officer Salary and Fringe Costs		\$ 488,849
Other Field Services Costs (Service and Supplies Budget)		
Total False Alarm Minutes as Percent of Total Patrol Minutes	\$ 1,210,260	
Allocated Other Field Services Costs	1.17%	
Patrol Vehicle Costs Based on Number of Responses		\$ 14,160
Total Miles Driven in Support of False Alarms (avg 3 miles per response; 9711 Responses; 2 Officers)	58,266	
Vehicle Maintenance Cost @ .42/mile	\$ 24,472	
Vehicle Fuel Cost @ .36/mile	\$ 20,976	
Total Marked Vehicle Cost in Support of Alarm Responses		\$ 45,448
TPD Alarm Program Assigned Personnel Cost (Assigned Personnel)		\$ 246,046
Insurance, Equipment and supplies (Proportional from Traffic Div)		\$ 2,726
Assigned Vehicles (2) Fuel		\$ 1,219
Assigned Vehicles (2) Maintenance		\$ 4,368
Average TPD Dispatch Salary and Fringe Costs		
Communications Division Salary and Fringe	\$ 4,771,227	
Total Communications Division Cost for Dispatched False Alarm Calls (@ 3.25%)	\$ 155,065	
Total Communications Division Cost for "Non-Dispatched" False Alarms (@ 2.75%)	\$ 131,209	
Total Communications Division Direct Costs		\$ 286,274
Total TPD Direct Costs for False Alarms		<u>\$ 1,089,090</u>
Estimate for Billing, Postage and Mailing if Registration Program Implemented		<u>\$28,500</u>
Total TPD Direct Costs for Alarm Response and Program Implementation		<u><u>\$ 1,117,590</u></u>

## ATTACHMENT 2 (continued)

### Patrol Costs Associated with Responses to False Alarms

Direct costs include patrol officers salary and fringe, proportional services and supplies, and proportional vehicle fuel and maintenance costs based on two vehicles per call and an average of 3 miles for the response.

Alarm response Cost: Patrol Officer Salary and Fringe	\$ 540,165
Reduction for Patrol Officer Costs covered by Grants (56)	<u>-51,316</u>
Total Direct Costs Patrol Officer Salary and Fringe	\$ 488,849
Other Field Services Costs (Services and Supplies)	14,160
Annual Vehicle Cost (Maintenance)	24,472
Annual Vehicle Cost (Fuel)	<u>20,976</u>
Total Patrol Associated Costs	<u>\$ 548,457</u>

### TPD Alarm Program Assigned Personnel Costs

Fixed costs attributable to individuals assigned to the alarm program. Currently, this includes two officers and the proportionate FTE (1/3) of a Lieutenant.

Assigned Personnel	\$246,046
Insurance, Equipment and Supplies	2,726
Annual Assigned Vehicle Cost (Fuel)	1,219
Annual Assigned Vehicles Cost (Maintenance)	<u>4,368</u>
Total TPD Alarm Program Assigned Personnel Costs	<u>\$254,359</u>

### TPD Dispatch Salary and Fringe Costs

These include a proportionate cost associated with the Communications Division's assigned dispatchers. Costs are broken out by calls immediately cleared (determined not valid for dispatch) and calls that are dispatched to patrol officers for response – later determined to be false. Each call is treated with equal value since they are all initially treated as valid calls until determined to either be valid or false by dispatch or patrol personnel. For this reason, annual false alarm call costs are a direct proportion of total calls for service (6.00% total).

Communications Division Salary and Fringe	\$4,771,227
Dispatched Alarm Calls (3.25%)	\$155,065
Non-dispatched Alarm Calls (2.75%)	<u>131,209</u>
TPD Dispatch Direct Cost	<u>\$286,274</u>

### Estimate for Billing, Postage and Mailing

Postage and Envelope Stuffing (\$.42 each)	\$21,000
Envelopes/Return Envelopes (\$.10 each)	5,000
Preprinting/Barcodes (\$.03 each)	1,500
Bill Print (\$.02 each)	<u>1,000</u>
Total Estimate for Billing, Postage and Mailing	<u>\$28,500</u>